CLAIMS

1. A method of analyzing vocal signals of a speaker (λ), characterized in that a probability density representing the resemblances between a vocal representation of the speaker (λ) in a predetermined model and a predetermined set of vocal representations of a number E of reference speakers in said predetermined model is used, and the probability density is analyzed so as to deduce therefrom information on the vocal signals.

2. The method as claimed in claim 1, characterized in that an absolute model (GMM), of dimension D, using a mixture of M Gaussians, is taken as predetermined model, for which the speaker (λ) is represented by a set of parameters comprising weighting coefficients (α_i, i = 1 to M) for the mixture of Gaussians in said absolute model (GMM), mean vectors (μ_i, i = 1 to M) of dimension D and covariance matrices (Σ_i, i = 1 to M) of dimension D × D.

3. The method as claimed in claim 2, characterized in that the probability density of the resemblances between the representation of said vocal signals of the speaker (λ) and the predetermined set of vocal representations of the reference speakers is represented by a Gaussian distribution ($\psi(\mu^\lambda,\Sigma^\lambda)$) of mean vector ($\mu^\lambda$) of dimension E and of covariance matrix (Σ^λ) of dimension E × E which are estimated in the space of resemblances to the predetermined set of E reference speakers.

4. The method as claimed in claim 3, characterized in that the resemblance ($\psi(\mu^\lambda,\Sigma^\lambda)$) of the speaker ($\lambda$) with respect to the E reference speakers is defined, for which speaker (λ) there are N_λ segments of vocal signals represented by N_λ vectors of the space of resemblances

with respect to the predetermined set of E reference speakers, as a function of a mean vector (μ^{λ}) of dimension E and of a covariance matrix (Σ^{λ}) of the resemblances of the speaker (λ) with respect to the E reference speakers.

5. The method as claimed in claim 4, characterized in that a priori information is further introduced into the probability densities of the resemblances ($\psi(\tilde{\mu}^{\lambda}, \tilde{\Sigma}^{\lambda})$) with respect to the E reference speakers.

6. The method as claimed in claim 5, characterized in that the covariance matrix of the speaker (λ) is independent of said speaker ($\tilde{\Sigma}^{\lambda} = \tilde{\Sigma}$).

7. A system for the analysis of vocal signals of a speaker (λ), comprising databases in which vocal signals of a predetermined set of speakers and their associated vocal representations in a predetermined model by mixing of Gaussians are stored, as well as databases of audio archives, characterized in that it comprises means for analyzing the vocal signals using a vector representation of the resemblances between the vocal representation of the speaker (λ) and the predetermined set of vocal representations of E reference speakers.

8. The system as claimed in claim 7, characterized in that the databases futher store the vocal signals analysis performed by said means for analyzing.

9. The use of a method as claimed in any one of claims 1 to 6, for an indexing of audio documents.

10. The use of a method as claimed in any one of claims 1 to 6, for an identification of a speaker.

11. The use of a method as claimed in any one of claims 1 to 6, for a verification of a speaker.